

SN 10/715,806
Docket No. S-100,641
In Response to Office Action dated December 19, 2005

REMARKS

The Office Action has been carefully reviewed. Reconsideration and allowance of the claims in light of the foregoing amendments is respectfully requested. A petition and fee for a two-month extension of time is submitted herewith.

Applicants initially wish to thank the Examiner for the courtesies extended during an interview held on March 6, 2006 with the undersigned attorney. While no final agreement was reached, the substance of the interview involved suggestions by the applicants to amend claim 19 to limit to the elected species which had been found allowable during the search by the Office. Additionally, applicants discussed amending claim 1 to change the transitional clause "comprising" to the transitional clause "consisting essentially of". Applicants submitted that this would overcome the teaching of trishydroxylpropyl phosphine by Barney et al. and eliminate rejection under either 35 U.S.C. 102 or 103. An interview summary sheet was provided by the Office and is consistent with this description of the substance other than it stated that Barney taught trishydroxyphosphine rather than trishydroxylpropyl phosphine.

Claims 1-26 were pending as amended on 30 November 2005. Claims 9-18 have been withdrawn from consideration. Applicant's election without traverse of the invention of group 1, claims 1-8 and 19-26, in the reply filed on 30 November 2005 was acknowledged. Claims 9-18 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 30 November 2005.

The Office Action noted that incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter.

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As none of the material is considered relevant to overcoming any objection, rejection, or other requirement imposed by the Office, applicants have not amended the specification. If the Office believes any amendment is necessary in this area, applicants request further notice.

A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim. A claim that depends from a dependent claim should not be separated by any claim that does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

It was not clear to applicants if the Office was asking for a change of numbering. Further clarification is respectfully requested.

The Office Action noted that claims 1-8 and 23-26 use the transitional term 'including', which has been construed as being synonymous with 'comprising', which is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

Applicants agree.

Regarding claims 19-22, since no prior art was found that anticipates or renders obvious the elected species of alkoxysilane-terminal groups, the search of the Markush-type claim was extended.

Applicants have amended claim 19 to limit the claim to the elected species of alkoxysilane-terminal groups.

Claims 1, 2, 5-8 and 19-26 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 5, 11, 12, 17, 18, 21, 22 and 25 of copending Application No. 10/715,733.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1, 2, 4, 5, 11 and 12 of copending application claim a process of preparing a solid composite including up to 30% loading of colloidal nanocrystals of the form M_1X_1 or $M_1M_2X_1$ or $M_1M_2M_3X_1$ or $M_1X_1X_2$ or $M_1M_2X_1X_2$ or $M_1M_2M_3X_1X_2$ or $M_1X_1X_2X_3$ or $M_1M_2X_1X_2X_3$ or $M_1M_2M_3X_1X_2X_3$ wherein M_1 , M_2 and M_3 each are zinc, cadmium, mercury, aluminum, gallium, indium, thallium, lead, tin,

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magnesium, calcium, strontium, barium mixtures or alloys and X_1 , X_2 and X_3 each are sulfur, selenium, tellurium, arsenic, antimony, nitrogen, phosphorus, silicon, germanium, silver, gold, cobalt, iron, nickel, copper or manganese-within a solvent-including per the specification of the copending application (Page 10 Lines 7-25) ethanol, 1-propanol and 1-butanol combined with tetrahydrofuran or hexane (See *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970)-to form an alcohol-soluble colloidal nanocrystal-polymer complex, admixing the alcohol-soluble colloidal nanocrystal-polymer complex with a sol-gel precursor material-including an alkoxide, halide or hydroxide of silicon, titanium, zirconium, aluminum, vanadium, iron, tin, tantalum, cerium or chromium-wherein the sol-gel host is transparent and forming said solid composite from said admixture such that the nanocrystals are uniformly dispersed within the sol-gel host but with the addition of an amphiphilic polymer unclaimed in the instant application; and claims 17, 18, 21, 22 and 25 of the copending application claim a solid composite comprising the reaction product of colloidal nanocrystals-of the structure M_1X_1 or $M_1M_2X_1$ or $M_1M_2M_3X_1$ or $M_1X_1X_2$ or $M_1M_2X_1X_2$ or $M_1M_2M_3X_1X_2$ or $M_1X_1X_2X_3$ or $M_1M_2X_1X_2X_3$ or $M_1M_2M_3X_1X_2X_3$ wherein M_1 , M_2 and M_3 each are zinc, cadmium, mercury, aluminum, gallium, indium, thallium, lead, tin, magnesium, calcium, strontium, barium mixtures or alloys and X_1 , X_2 and X_3 each are sulfur, selenium, tellurium, arsenic, antimony, nitrogen, phosphorus, silicon, germanium, silver, gold, cobalt, iron, nickel, copper or manganese-complexed with an amphiphilic polymer including hydrophobic and hydrophilic groups and a sol-gel precursor material-including an alkoxide, halide or hydroxide of silicon, titanium, zirconium, aluminum, vanadium, iron, tin, tantalum, cerium or chromium-wherein the nanocrystals have a volume loading of up to about 30% within the solid composite.

Since the claims of the instant application use the inclusive or open-ended transitional terms 'including' or 'comprising', even though the claims of the copending application claim the additional amphiphilic polymer unclaimed in the instant application, they still "anticipate" the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicants submit that in view of the fact that the conflicting claims have not been yet patented, no further action is presently required.

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Claims 1-6 and 19-26 stand rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication 2002/011080 (Barney hereinafter). The Office Action stated that Barney teaches colloidal nanocrystals, a solid composite including nanocrystals and a process of making a solid composite including nanocrystals comprising mixing nanocrystals-including ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, HgTe, AlN, AlP, AlAs, AlSb, GaN, GaP, GaAs, GaSb, InN, InP, InAs, InSb, TiN, TiP, TiAs, TiSb, PbS, PbSe and PbTe nanocrystals (paragraphs 0011 and 0022)-with a lower alcohol-ethyl alcohol, butyl alcohol and isopropyl alcohol (paragraph 0032)-a non-polar solvent-including 1,1,1-trichloroethane, dichloromethane and cyclohexane (paragraph 0032)-and a sol-gel precursor-such as silicon alkoxide, titanium alkoxide or zirconium alkoxide (paragraph 0031)-at ratios of 5:1 to 10:1 of the nanocrystal solution to the binder (paragraph 0042) and forming a solid matrix containing the nanocrystals (paragraph 0031). Further, claims 7 and 8 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Barney. The Office Action stated that since Barney teaches the same composition as claimed, one of ordinary skill in the art at the time the invention was made would have expected that the transparency of the sol-gel host and the uniformity of the dispersion of nanocrystals of the Barney composition would inherently be the same as claimed.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103.

Applicants have amended claim 1 to change the transitional phrase from "comprising" to the more limited language of "consisting essentially of". The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps and those that do not materially affect the basic and novel characteristics of the claimed invention. In the specific example of Barney wherein a lower alcohol is used, the reference specifically calls for the addition of trishydroxylpropyl phosphine (see the specific teachings in paragraph 41 on page 5). Applicants submit that use of the trishydroxylpropyl phosphine as in Barney does materially affect the basic and novel characteristics of the presently claimed invention. The trihydroxylpropyl phosphine

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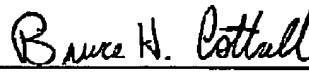
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would be incorporated into the network of a resultant composite in Barney and would be absent from the resultant composite in the presently claimed invention. Both nanocrystal volume loadings and the refractive index of a composite film can be affected by the inclusion of the additional material, i.e., the trishydroxylpropyl phosphine as in Barney. Accordingly, applicants submit that claims 1-6 are not anticipated by Barney. Further, as there is no suggestion by Barney to eliminate the use of the trishydroxylpropyl phosphine, claims 1-8 are submitted to be non-obvious over Barney. Claims 1-8 are urged to be allowable.

In view of the foregoing amendments and remarks, claims 1-8 and 19-26 are urged to be allowable over 35 U.S.C. 102 and 103. If the Examiner believes there are any unresolved issues despite this amendment, the Examiner is urged to contact the applicants' attorney undersigned below for a telephonic interview to resolve any such issue. A favorable action is solicited.

Respectfully submitted,

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